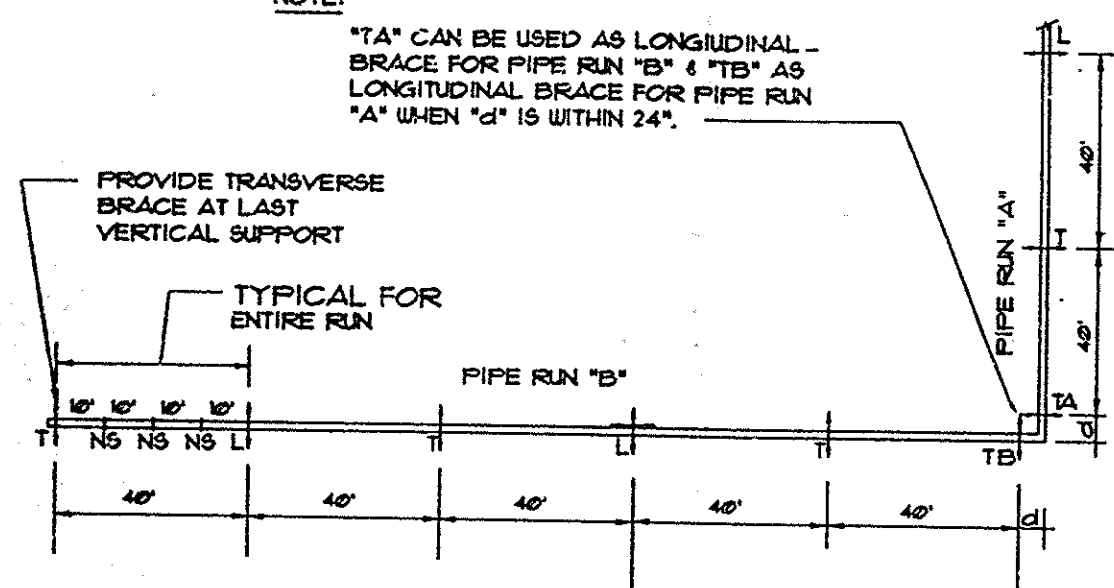


"TA" CAN BE USED AS LONGIUDINAL -
BRACE FOR PIPE RUN "B" & "TB" AS
LONGITUDINAL BRACE FOR PIPE RUN
"A" WHEN "d" IS WITHIN 24"

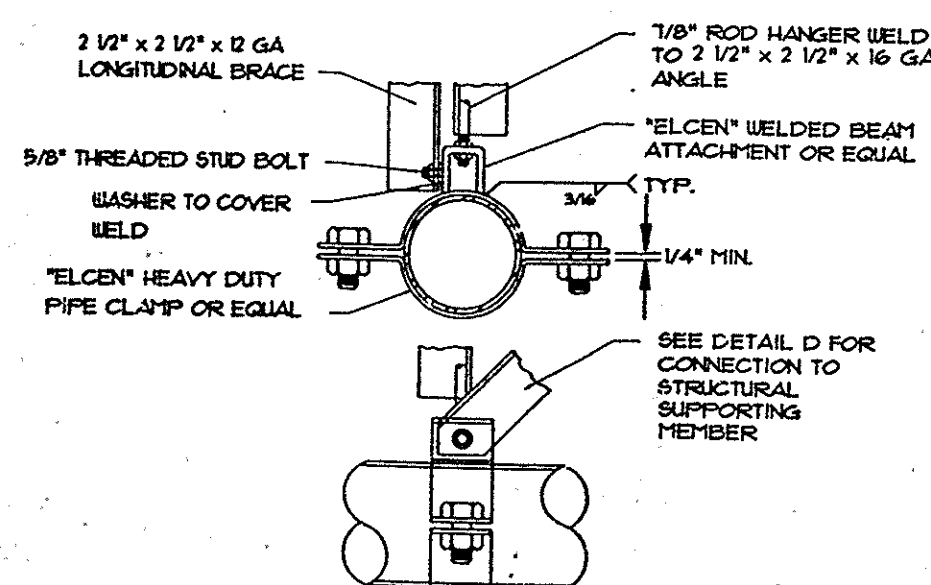


"NS"-INDICATES NON-SEISMIC SUPPORTS
 "T"-INDICATES TRANSVERSE BRACING
 "L"-INDICATES LONGITUDINAL BRACING

1. PIPES SHALL HAVE NON-SEISMIC SUPPORTS BETWEEN SEISMIC SUPPORTS @ 10'-0" O.C. OR NEAREST FITTING.
2. PIPES SHALL HAVE SEISMIC SUPPORTS @ 40'-0" O.C. ALTERNATING BETWEEN TRANSVERSE AND LONGITUDINAL BRACINGS.

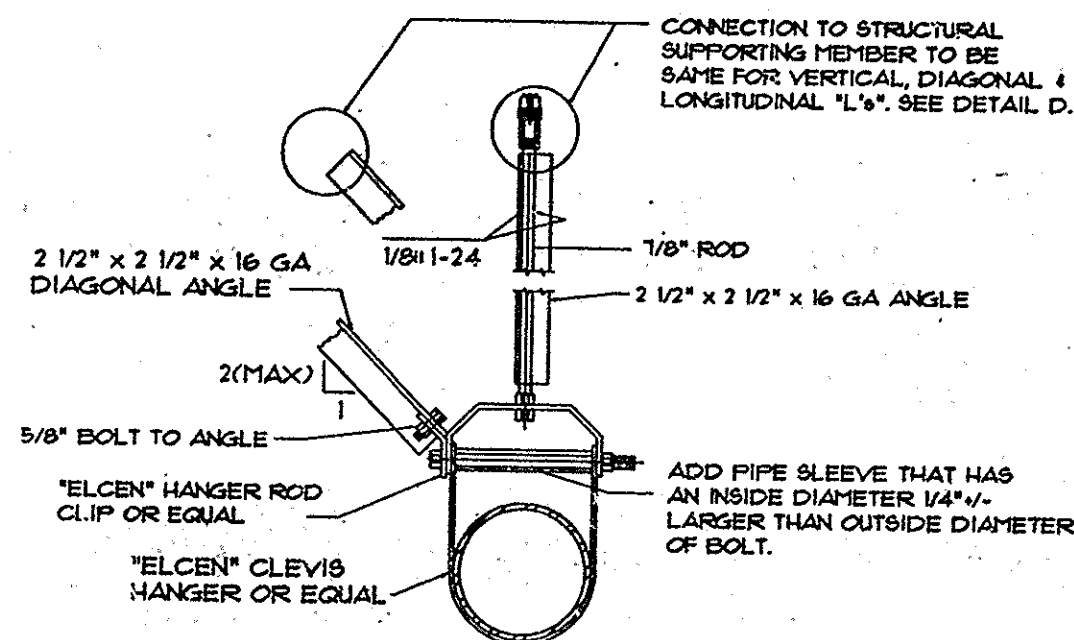
DETAIL A

NTS



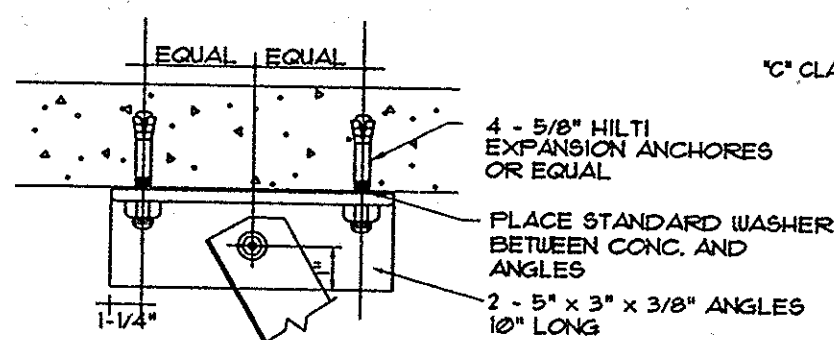
DETAIL B

NTA



DETAIL C

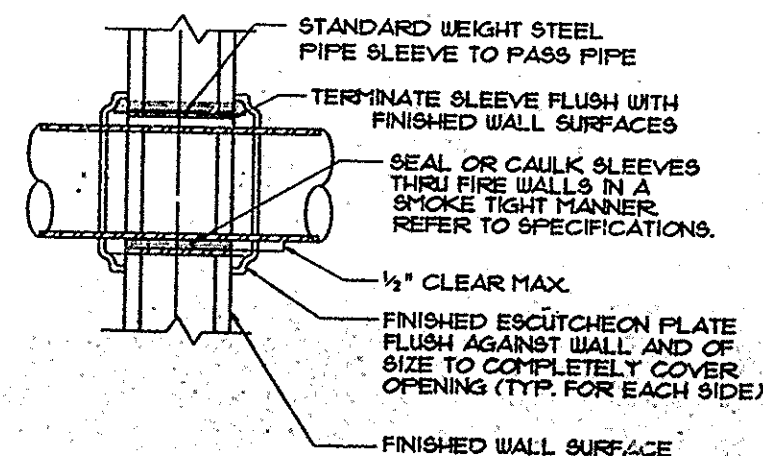
NTS



CONCRETE

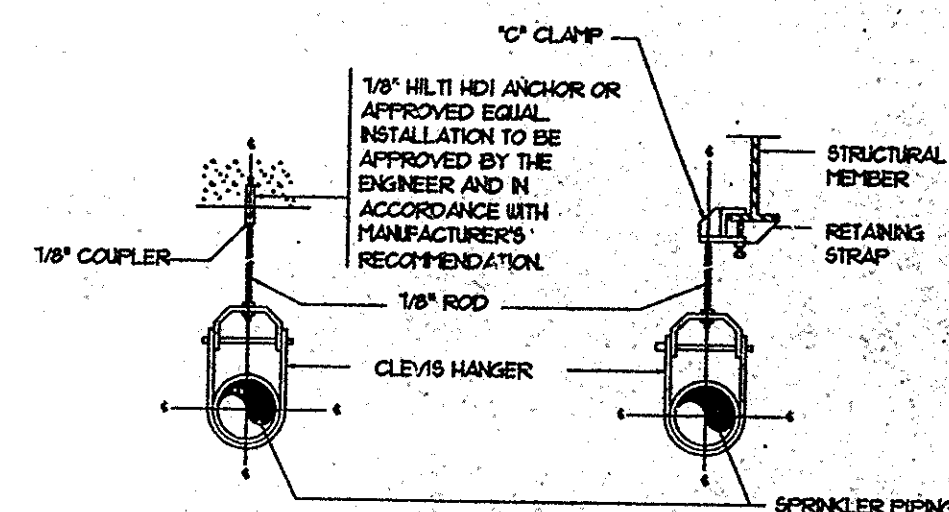
DETAIL D

NTS



DETAIL F

NTS



NOTE: PROVIDE ADDITIONAL SUPPORTS ON BOTH SIDES
OF ALL VALVES INSTALLED UNDER THIS CONTRACT

DETAIL E

NTB

STANDARD NYC SEISMIC NOTE:

1. SEISMIC PROTECTION OF PIPING SHALL BE PROVIDED AND SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE NEW YORK CITY BUILDING CODE REFERENCE STANDARD RS 9-6, LATEST REVISION, AND AS REVISED BELOW.
TABLE 23-P
- a) ADDING AFTER IIIJ
2. SPRINKLER PIPING 220
- b) ADDING THE FOLLOWING NOTES AFTER NOTE 4 AT THE BOTTOM OF THE TABLE:
 5. THE DESIGN OF SEISMIC RESTRAINTS FOR SPRINKLER PIPING IN COMPLIANCE WITH NFPA 13 USING A DESIGN ACCELERATION OF 0.15 IS ACCEPTABLE IN LIEU OF COMPLIANCE WITH THESE PROVISIONS.
 6. SEISMIC RESTRAINTS ARE NOT REQUIRED FOR ANY OF THE FOLLOWING CONDITIONS FOR PIPING SYSTEMS:
 1. PIPING SUSPENDED BY INDIVIDUAL HANGERS 12 INCHES OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE.
2. SEISMIC PROTECTION DEVICES SHALL RESIST THE SEISMIC FORCES DETERMINED UNDER THE NEW YORK CITY BUILDING CODE, AS MODIFIED ABOVE, WHEN APPLIED IN ANY DIRECTION WITHOUT FAILURE OR PERMANENT DISPLACEMENT OF THE PROTECTED SYSTEM.
3. ALL SEISMIC PROTECTION DEVICES SHALL BE THE PRODUCT OF ONE MANUFACTURER AND SHALL HAVE STATE OF CALIFORNIA OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT (OSHPD) PRE-APPROVAL "R" NUMBERS CERTIFYING THEIR MAXIMUM HORIZONTAL AND VERTICAL LOAD RATINGS. THE MANUFACTURER OF THE SEISMIC PROTECTION DEVICES SHALL BE A SPECIALIST IN SEISMIC MOUNTINGS WITH AT LEAST FIVE YEARS EXPERIENCE ON PROJECTS OF A SIMILAR SCOPE.
4. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL SEISMIC PROTECTION CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. THE PROFESSIONAL ENGINEER SHALL SIGN AND SEAL HIS CALCULATIONS. ADDITIONALLY, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL SEISMIC PROTECTION DEVICE SHOP DRAWINGS, CATALOG CUTS AND LOCATION PLANS.

Sheet 10 OF 10

**THE PORT AUTHORITY
OF NY & NJ**

ENGINEERING PROGRAM MANAGER
MAINTENANCE ENGINEERING DESIGN DIVISION
D. L. [Signature]
CHIEF MECHANICAL ENGINEER

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DRAWINGS CONSTITUTING A PART OF CONTRACT NO. _____ IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

DATE 7/15/97 P. Schreyer
SPEC. WRITER
DATE _____ [Signature]
ENGINEER OF RECORD

No.	Date	Revision	Approved
-----	------	----------	----------

[illegible]

World Trade
Center

INSTALLATION OF MAIN SPRINKLER LOOP SERVICE LEVEL B-1

DETAILS

This drawing subject to contract in contract.
All inventions, ideas, designs and methods
herein are reserved to Fort Authority and
may not be used without its written consent

V.C.	R.L.	
Designed by	Drawn by	Checked by

Date 3/28/97 Scale NONE

Contract Number **WTC-176** Drawing Number **SP-9**